

FUNDAMENTAL FACTS
OF
ERIE'S GAS SITUATION
PREPARED FOR
THE FUEL COMMITTEE
OF
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FUNDAMENTAL FACTS OF ERIE'S GAS SITUATION*

Natural Gas Decline. Natural gas is becoming scarce and the demand is now greater than the available supply. Since there is no regeneration, when the gas is used it is gone forever. The declining supplies still available will not permit the general use of gas for house heating service and its future use must be limited to cooking, hot water heating and incidental house heating.

Natural Gas Utilization Waste. The waste in natural gas use in Erie is excessive. Natural gas is still used in many appliances made originally for coal. Tests on a coal cook stove using natural gas show that such a stove used 5 times as much gas as a correctly built natural gas stove. With proper utilization methods Erie consumers could get the same service with 1/3 of the gas; that is, make one foot of gas do the work where 3 are now misused.

Community's Interest in Natural Gas Waste. The unnecessary waste of natural gas by one consumer, whereby his neighbors are made to endure physical suffering and endure great inconvenience, is not the exercise of an inalienable right to a wasteful use of gas, but is a community matter in which the community interests as a whole are paramount, and where in the interest of a just, reasonable, safe, adequate and sufficient service for all, no one consumer should be allowed to waste that which would deprive others of satisfactory service.

Worth of Natural Gas. Natural gas is worth twice any manufactured gas that can be made. The following are the quantities of substitutes necessary to furnish the same heating energy as a 1,000 cu. ft. of natural gas:

Manufactured gas	2,000	cu. ft.
Gasoline	9	gallons
Kerosene	8 1/2	"
Alcohol	15	"
Electricity	322	kw. h.

*For further information see:

Smithsonian Institution's

(a) Study of Pennsylvania's Resources

(b) Bulletin 102, part 7; Natural Gas; its production, service, and conservation

(c) Bulletin 102, part 8; Manufactured Gas in the Home

(d) Manufactured Gas and Natural Gas Situation in Pennsylvania.

United States Bureau of Mines:

(e) Technical paper, No. 257; Waste and Correct Use of Natural Gas in the Home.

(f) Catechism of Natural Gas.

Manufactured Gas. Manufactured gas can easily be mixed with natural gas but it is not appreciated that this must always result in the degradation of natural gas and will make the mixture cost more and will be worth less than straight natural gas. If satisfactory gas service is to be maintained, it is not desirable to at times furnish straight natural gas and at other times to mix the gas, because the ratio of the mixture of manufactured and natural must be kept constant. For this, and the economic reason of excessive cost, it is not feasible to build a manufactured gas plant and hold it merely to be used during the peak load demand in the winter time. Changing from natural gas to manufactured gas is not merely an easy transition, as many have supposed, but a complete revolution as far as operating conditions and utilization methods are concerned. That is, to use manufactured gas at all it would be necessary to replace all of the appliances made for coal that are now used for natural gas, and all other wasteful gas using appliances, with correctly built equipment.

Manufactured Gas Volume Relatively Small. The volume of manufactured gas that can be sold is small in comparison to the volume of natural gas now used. For instance, the maximum days' sales in cubic feet per domestic consumer for manufactured gas at Harrisburg and natural gas at Erie compare as follows:

Harrisburg	135 cu. ft.
Erie	463 cu. ft.

The average annual sales per domestic consumer in "1,000" cu. ft. for manufactured gas at Harrisburg and natural gas at Erie were as follows:

Harrisburg	32 "1,000" cu. ft.
Erie	95 "1,000" cu. ft.

This shows that per domestic consumer, that Erie received 3 times as much gas as was delivered at Harrisburg, yet because of misuse of its gas, Erie had poor service.

Residue Natural Gas Available. There is still enough residue gas available to enable the company in Erie to give good service to present consumers and to make the necessary extensions to serve the Erie homes that are now without gas and render satisfactory service to all on a "small volume" but adequate basis for 15 to 20 years. However, to get this residue gas it will be necessary to make it worth saving.

Relative Cost of Natural Gas. The average price of manufactured gas in the United States is \$1.25 per "1,000" which is the equivalent of \$2.50 per "1,000" for natural gas. The present 50c rate in Erie is, therefore, 20% of the cost of manufactured gas.

Capital Cannot be Commandeered. Capital for prospecting and hunting for additional supplies of natural gas to replace the rapidly declining present supplies cannot be commandeered, but can be secured only as the mining operation is made profitable. That is, only adequate prices in the field will induce capital to find gas. For this reason the public and rate regulating bodies must appreciate that a natural gas rate cannot coerce capital into the enterprise, but that capital will be induced into the enterprise only when it is made profitable to take the risk.

Costs per Unit Will Increase. The fixed charges in natural gas plant operation are larger than for any other utility, usually being over 70% of the total cost. The operating expenses necessary to get the residue supplies will be constantly on the increase. Therefore, a constantly smaller volume of gas must carry the total cost burden. This will increase the cost per unit.

Total Annual Cost to Consumer Not Increased. The use of efficient appliances will so curtail the volume of gas needed, that the domestic user can pay the higher price per unit necessary to induce persistent hunting for new supplies, and secure the most efficient removal of the residue supplies, without increasing his annual bill and get satisfactory natural gas at a cost not to exceed 40% of manufactured gas.

Courses Open to Erie Gas Consumers. The citizens of Erie have three courses open and it is up to them to decide which is to be followed:

- a. Continue the present inadequate and unsatisfactory service without extensions and where the operating conditions will become worse each winter.
- b. Install manufactured gas, this would cost more and be worth less than the natural gas. To make manufactured gas use possible, either on the basis of a mixed gas or straight manufactured gas, it will be necessary to revamp the entire appliance situation in Erie.
- c. Frankly face the appliance situation, immediately carry out the U. S. Government recommendations for correct gas use and make the residue natural gas worth saving; that is, use natural gas only, and as manufactured gas, must be used. If this is done, Erie can have satisfactory natural gas service for 15 to 20 years at a cost not to exceed 40% of what manufactured gas would cost.